



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,570	02/19/2004	Kiichi Ucyanagi	118764	1692
25944	7590	11/18/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			KAPADIA, VARSHA A	
			ART UNIT	PAPER NUMBER
			2651	
DATE MAILED: 11/18/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/780,570	Applicant(s) UEYANAGI, KIICHI	
	Examiner Varsha A. Kapadia	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-13 and 15-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-13,16 and 18-28 is/are rejected.
- 7) ☒ Claim(s) 5,15,17,27 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2651

This office action is responsive to the amendment filed on

### **Rejection Under 35 U.S.C. 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, 6- 9, 13, 18-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kasiraj et al.

With regards to claim1, Kasiraj et al discloses a heat-assisted magnetic recording head (see figs. 2A-5B and disclosure thereof), comprising:

A thin film magnetic transducer having a pair of yoke and generating magnetic field in a magnetic gap between two magnetic poles at the end of yoke (see elements P1, P2 and Y in figs. 2A-2B and 5A-5B, disclosure thereof and abstract); a heater placed in the vicinity of the magnetic gap (See element 20 and 20' in the drawings and disclosure thereof); a part of the recording medium is heated by the heater to reduce a magnetic-coercive force of the part of the medium as recited in the claim (see abstract and col.4 lines 1-19). Kasiraj et al further discloses that the heater includes a conductor placed at the gap and electrically connected to the poles (see element 20 in the drawings, fig. 6 and disclosure thereof and col.6 lines 6-20).

With regards to claims 3-4, see Kasiraj et al on col.5 lines 1-14.

With regards to claim 6, Curie temperature of the two poles is higher than that of the yokes is considered inherently disclosed by Kasiraj et al since heating element is in the close vicinity of the poles.

Art Unit: 2651

With regards to claim 7-8, Kasiraj discloses that the yokes of the transducer are electrically insulated (see the paragraph bridging cols. 4 and 5).

With regards to claim 9, Kasiraj et al discloses that the yoke is made of low electric resistance material (See col. 6 lines 7-9).

With regards to claim 13, the limitations recited in claim 13 are similar to the limitations recited in claim 1; therefore the rejection applied to claim 1 above in the office action is herein repeated for the same reasons. Claim 13, further recites a scanning unit that scans the heat assisted recording head on the medium. Kasiraj et al discloses such in col. 3 lines 37-56).

With regards to claims 18-21, 23, and 26, Kasiraj et al discloses the heater including conductor placed at the magnetic gap and electrically connected to two poles, the conductor applying an electric current to the heater through the yokes (poles) to generate heat as claimed (see col. 6 lines 6-20, element 20, P1-P2 and Y in the drawing and disclosure thereof).

With regards to claim 22, Kasiraj et al discloses a dielectric spacer as claimed (see col. 7 lines 21-25).

With regards to claim 24, see Kasiraj et al on col. 6 lines 4-10.

### **Rejection Under 35 U.S.C. 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2651

Claims 8, 10, 12 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasiraj et al (6,493,183) in view of Garfunkel et al (6,325,947).

With regards to claim 10, Kasiraj et al discloses the invention as described above in this office action, but fails to further specify that the yoke is made of stacked thin films.

However, Garfunkel et al disclose such, see col.1 lines 9-18.

It would have been obvious to one of ordinary skill in the art at the time this invention was made to modify the recording head structure disclosed by Kasiraj et al with the above teachings from Garfunkel et al in order to provide head having yoke made of stacked thin film to increase the efficiency while maintaining a low profile, as taught by Garfunkel et al.

With regards to claims 12 and 25, Kasiraj et al discloses the invention as described above in this office action, but fails to further specify that the magnetic head includes a third pole. Garfunkel et al further discloses a third pole as claimed (see fig. 4A elements 60-61 and 68 and disclosure thereof). Garfunkel et al is relied upon for the same reasons as indicated above in this office action.

With regards to claim 8, Kasiraj et al discloses the invention as described above in this office action, but fails to further specify that the insulator is made of

Art Unit: 2651

ferrite. Garfunkel et al further shows that the insulator in the yoke is made of ferrite (see col.6 line 52-65).

It would have been obvious to one of ordinary skill in the art at the time this invention was made to modify the recording head structure disclosed by Kasiraj et al with the above teachings from Garfunkel et al in order to provide an insulation made of ferrite, since ferrite is well known and widely used insulator and no unexpected results are to occur, hence to provide an alternate insulating material, as taught by Garfunkel et al.

Claims 11, 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasiraj et al (6,493,183) in view of Kimoto et al (4,520,409).

With regards to claim 11, Kasiraj et al discloses the invention as described above in this office action, but fails to further specify that the yokes include pair of electrodes.

However, Kimoto et al disclose such, see figs. 3 and 5 elements 10 and disclosure thereof.

It would have been obvious to one of ordinary skill in the art at the time this invention was made to modify the recording head structure disclosed by Kasiraj et al with the above teachings from Kimoto et al in order to provide head having yoke having a pair of electrodes in order to properly control the heat applied to the

Art Unit: 2651

heating elements via electrical wire to maintain the desired Curie temperature of the recording medium, as taught by Kimoto et al.

With regards to claims 16 and 28 Kasiraj et al discloses the invention as described above in this office action but fails to further show that the electrical current applied to the heater in a pulse form. Kimoto however, discloses such (see fig. 4 elements 5 and 14 and disclosure thereof). Kimoto et al is relied upon for the same reasons indicated above in this office action.

### **Allowable Subject Matter**

Claims 5, 15, 17, 27 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5, 15, 17, 27 and 29 differ from the prior art of record for the same reasons recited in the office action mailed on 6/7/05.

### **Response to Remarks**

Applicant's arguments filed on 8/24/05 have been fully considered but they are not persuasive. Applicant argues that references relied upon for the claim rejection fails to disclose a conductor applying an electrical current to the heater through the yokes to generate heat as claimed because reference to Kasiraj disclose only a single yoke.

Examiner respectfully disagree because in the reference to Kasiraj, fig. 6 shows that leads 50' and 52' carry current through the yoke Y. figs. 2A-5B further shows pole tips P1 and P2 at

Art Unit: 2651

the end of the each pole/yoke. Yokes and poles are interchangeable component names well known in the art with a function of transmitting the magnetic flux in the magnetic head.

Rejection as applied is therefore considered proper.

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Varsha A. Kapadia whose telephone number is (571) 272-7557. The examiner can normally be reached on Mon Tue and Thurs. from 6:30 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571 272 7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



VK



DAVID HUDSPETH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600